

**LISTING OF THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (original) An apparatus for routing messages in wireless networks, comprising:  
2 a first plurality of filters, each of said plurality of filters adapted to provide a  
3 plurality of frequency-based message signals converted from an optically-based signal;  
4 a plurality of mixers connected to the first plurality of filters, the mixers adapted  
5 to mix the plurality of frequency-based message signals with a plurality of sub-carriers to  
6 generate a plurality of frequency-based sub-carrier modulated message signals;  
7 a frequency generator connected to the plurality of mixers for providing the  
8 plurality of sub-carriers to the mixers;  
9 a combiner connected to the mixers for combining the plurality of frequency-  
10 based sub-carrier modulated message signals;  
11 a second plurality of filters connected to the combiner and adapted to receive and  
12 group the plurality of frequency-based sub-carrier modulated message signals;  
13 a plurality of optical transmitters, each of said plurality of transmitters connected  
14 to one of the second plurality of filters for optically converting and transmitting the  
15 frequency-based sub-carrier modulated message signals.
- 1 2. (original) The apparatus of claim 1 wherein the each of the first plurality of filters  
2 is centered at a pre-defined subcarrier frequency.
- 1 3. (original) The apparatus of claim 2 wherein the plurality of filters are RF filters.
- 1 4. (original) The apparatus of claim 1 wherein the frequency generator generates and  
2 applies a particular sub-carrier frequency to one of the mixers according to control  
3 information associated with the frequency-based message signal.

1 5. (original) The apparatus of claim 4 wherein the control information is associated  
2 with the frequency-based message signal via a generalized MPLS (GMPLS) label.

1 6. (original) The apparatus of claim 4 wherein the control information is contained  
2 in a header portion of the frequency-based message signal.

1 7. (original) The apparatus of claim 1 wherein the second plurality of filters are  
2 bandpass filters.

1 8. (original) The apparatus of claim 1 further comprising a receiver device for  
2 receiving the optically converted and transmitted sub-carrier modulated message signals  
3 and filtering the sub-carrier frequencies from the frequency-based message signals.

1 9. (canceled)

1 10. (currently amended) The method of claim [[9]] 11 wherein the step of converting  
2 includes filtering the received signals at predetermined sub-carrier frequencies to recover  
3 the frequency-based message signals contained therein.

1 11. (currently amended) ~~The method of claim 9~~ Method for routing messages in  
2 wireless networks comprising the steps of:

3 optically receiving one or more composite optical signals;

4 converting said one or more composite optical signals into a plurality of  
5 frequency-based message signals;

6 mixing each of the plurality of frequency-based message signals with a  
7 corresponding sub-carrier to generate a plurality of sub-carrier modulated frequency-  
8 based signals;

9 combining and grouping said plurality of sub-carrier modulated frequency-based  
10 signals; and

11 optically converting and transmitting each group of said plurality of sub-carrier  
12 modulated frequency-based signals;

13            wherein the step of mixing includes interpreting control information associated  
14 with the frequency-based message signal to determine the appropriate sub-carrier for  
15 mixing.

1    12.    (original) The method of claim 11 wherein the control information is contained  
2 within a generalized MPLS label of the frequency-based message signal.

1    13.    (original) The method of claim 11 wherein the control information is contained  
2 within a header of the frequency-based message signal and assigns a sub-carrier  
3 frequency thereto.